

Report for IAU Commission 4 from the United States Naval Observatory

This report covers activity in the Nautical Almanac Office (NAO) and its parent organization, the Astronomical Applications Department. S. Howard retired as Chief of the NAO in May 2003. S. Urban replaced her in June 2004. S. Dick and R. Miller served terms as Acting Chief in the interim. M. Efroimsky joined the staff on a permanent basis in March 2005.

J. Hilton served as chair of the Division I Working Group on Precession and the Ecliptic and as a member of the Inter-Division Working Group on Cartographic Coordinates and Rotational Elements. Urban chaired the Commission 8 Working Group on the Densification of the Optical Reference Frame. G. Kaplan served as a member of the Division I Working Group on Nomenclature for Fundamental Astronomy. J. Bangert served as a member of the Standards of Fundamental Astronomy (SOFA) reviewing board.

Publication of *The Astronomical Almanac* and *The Astronomical Almanac Online*, *The Nautical Almanac*, *The (U.S.) Air Almanac*, and *Astronomical Phenomena* continued as a joint activity between Her Majestys Nautical Almanac Office of the United Kingdom and the NAO. *The Astronomical Almanac* for 2006, released in January 2005, was the first edition to incorporate fully the resolutions on reference frames, Earth rotation models, and time scales adopted by the IAU in 1997 and 2000.

A major upgrade of the *Multiyear Interactive Computer Almanac*, MICA version 2.0, was completed and released in July 2005. The software is available in two editions for computers running Microsoft Windows and Apple Mac OS operating systems.

Use of the Astronomical Applications Department web site (<http://aa.usno.navy.mil/>) continued to grow during the reporting period. Usage varied from about 20,000 to 40,000 user sessions per day.

U.S. Naval Observatory Circular 179, *The IAU Resolutions on Astronomical Reference Systems, Time Scales, and Earth Rotation Models: Explanation and Implementation*, was in preparation and scheduled for release in late 2005.

A new version of the Naval Observatory Vector Astrometry Subroutines (NOVAS) that implements the 1997 and 2000 IAU resolutions is under development, with release anticipated in late 2005 or early 2006.

An active research program in positional and dynamical astronomy is underway within the department. See <http://aa.usno.navy.mil/research/> for details.